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## The nesting of the Black-bellied Seed-cracker, *Pirenestes ostrinus* in Uganda and notes on its habitat and classification

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The classification of the races of *Pirenestes ostrinus* (Vieillot) is based on the black bodies of the ♂♂—they are brown in the ♂♂ of *Pirenestes minor* Shelley, size of birds and dimensions of bill, the races being generally referred to as large-billed or small-billed, but there are many intermediates. There must be a significant relationship between bill size (and its development) and the type and hardness of the seed on which these birds feed. With reference to bill size the van Somerens (1: p. 100) draw attention to the great variation in bill measurements of the Grosbeak Weaver, *Amblyospiza* from one locality which, however, an examination of some two hundred examples from several widespread regions does not bear out. Of taxonomic value is the mouth pattern of nestling *Pirenestes*.

Chapin (2: pp. 490–498) discusses in considerable detail the distribution of typical *Pirenestes ostrinus ostrinus* (Vieillot) and its races *P. o. rothschildi* Neumann and *P. o. maximus* Chapin, as well as briefly referring to *Pirenestes minor frommi* Kothe, which additional material (*vide* Benson *ibid* and 6: p. 110) indicates is a race of *P. ostrinus*. There seems to be some confusion over the identification of races of similar appearance in which differences are to a great extent based on mandible width. Material to enable satisfactory conclusions is still scanty and until long series are available from one locality, the problem is likely to remain unsolved. Pairs have been collected in which the mandible width of the one is widely divergent from that of the other (but see Chapin). Chapin (p. 493) is probably right in his contention that “The present confusing conditions are best explained, I believe, by changes in the vegetation due to the recent activity of man, which has brought into contact large and small billed forms,” and he advocates “study the nature of vegetational cover in each spot where *Pirenestes* is taken”. Further (p. 498) “Since 1914 the clearings about Stanleyville have expanded enormously, and this should be a most propitious spot for a study of the relations between the large and small forms of *Pirenestes*” (the large form being *P. o. maximus* and the small, *P. o. rothschildi*).

Three races of *Pirenestes ostrinus*—the nominate, *maximus* and *rothschildi*—are recorded from Uganda, all of which I possibly came across, and Chapin (p. 491) further refers to a rather large race with comparatively small bill, *P. o. centralis* Neumann, from the Sese Islands of Lake Victoria. This, however, Praed and Grant (3: p. 1053) place in the synonymy of *Pirenestes rothschildi*; and these authorities recognise no races of *P. ostrinus* and regard it and *P. rothschildi*, *P. maximus* and *P. frommi* each as a separate species, also (3: p. 990) "The relationship of the birds of this group is obscure, and whether they are species or races is still a matter of some controversy."

Bannerman (4: p. 283) quoting Chapin (*in litt.*) "There certainly are not two black-bodied species, for between *rothschildi* and *maximus* I believe I have seen every intermediate size" . . . "What I contend is that the very large-billed birds ('*maximus*') are usually found around the outer margins of the range, living in patches of woods in savanna districts, while the very small-billed ones ('*rothschildi*') live in heavy forests, mainly in the scrubby growth of clearings" . . . "Moreover, the birds of middle size were found along the edge of the forest belt" . . . "These size groups (*ostrinus*) are not races in the usual sense. Their ranges are hard to delimit, and do overlap" . . . "This much is sure: *ostrinus* may be regarded as a species with unusual variations in size. The variation is largely geographic." Chapin was for many years familiar with the regions and habitats of which he writes. I shall later be referring to the effect man's activities have had on the distribution of *P. ostrinus* at Entebbe, Uganda.

The van Somerens (1: p. 100) collected a breeding ♂ in July, near an overgrown stream by the forest edge, where it had been seen on several occasions, at Bundibugyo (in Bwamba), immediately west of the northern end of Ruwenzori, but refer to it binomially as *P. ostrinus* "because we are not satisfied that the grouping advocated by recent authors is correct". The width of mandible at base is 15 mm. which would bring it within the size range of Chapin's *P. o. ostrinus*. I have twice observed this skulking species almost at ground level in this region, consisting mainly of low-lying swampy forest, with gallery forest, but latterly there has been much clearing; on each occasion it immediately disappeared into dense vegetation near water. Chapin (p. 493) refers to a ♀ of *P. o. rothschildi* from Mbale, in Uganda. This locality needs explanation, for it is *not* the well-known administrative centre to the west of Mount Elgon, but is a small settlement some 17 miles south-east of Kampala on the highway to Masaka and which—to make confusion worse confounded—has been re-named Mpigi, the designation to be found on present-day maps. Here there is swampy forest connected with the lake-shore forests to the south, and it is a typical haunt of what I believe to be nominate *P. o. ostrinus*. Chapin (p. 497) also refers to a specimen of *P. o. maximus* collected by van Someren at Lugalambo, a savanna locality with forest patches to the north of Mbarara, in Southern Ankole (S. W. Uganda); and (p. 495) to a ♂ and ♀ *P. o. ostrinus* from Bwamba Forest, with mandible width respectively 15 mm. and 17 mm.

Jackson (5: p. 1489) records examples of *P. o. ostrinus* (width of the lower mandible at widest point about 15 mm.) from Mpumu, Kyetema and Mabira—all forest areas in Kyagwe (S. E. Buganda), just north of Lake Victoria, and from Bugoma—a forest region in Western Uganda, on



the scarp, above Lake Albert. A nest found at Mpumu will be discussed later. Jackson (p. 1490) refers to the example of *P. o. maximus* (mandible width 17 mm.—20 mm.) from Lugalambo, a specimen of *P. o. centralis* (mandible width 13 mm.) collected in 1890 by Stuhlmann on the Sese Islands, and another from Entebbe (referred to this race by Chapin).

In the Coryndon Museum, at Nairobi, there is a ♂ *P. ostrinus* (width of base of lower mandible 14 mm.) from near Kampala, but the specific locality is not recorded. It could have been collected in any of the patches of forest which remain not far distant around the city, despite the intensive clearing which has for long been taking place. I never managed to collect any specimens of *Pirenestes* in Uganda; I found it far too elusive, though I observed it occasionally—in patchy, thick, bushy cover along the Lubilia river in open country on the Congo border (south of Ruwenzori) where it was far too active to be collected; in dense, tangled cover along a swampy stream (6,500 feet), in open highland country and tree-heath (*Erica arborea*) zone, at Chabahinga (immediately west of Lake Bunyonyi) in south-west Kigezi (S. W. Uganda), where, too, it was adept at avoiding collection; in the lake-shore forests, near swamp, on half-a-dozen islands and along the mainland coast of Lake Victoria; in swampy regions with thick cover in the previously mentioned Mabira Forest; specifically in several lake-shore forests—some swampy—near Entebbe; and not uncommonly in the Botanic Gardens—the site of former lake-shore forest—at Entebbe. This last mentioned locality consists of several acres of reclaimed forest tidily laid out and includes the remnants of experimental Para rubber (with pepper), oil palm (*Elaeis guineensis*) and cocoa plantations, a tiny relic of primeval forest (well patronized by bird life), and an extensive area of close-cut, lawn-like grass slopes—the whole right on the shore of a sheltered bay in Lake Victoria.

A new highway which was constructed just north of the Botanic Gardens entailed the destruction of a considerable area of swampy lake-shore forest in which the *Raphia* palm, *Raphia monbuttorum*, was predominant, and some years later, in 1946, in sites which obviously had been previously used, two nests of *Pirenestes ostrinus*, with fresh eggs, were found respectively on 5th (c/5) and 10th (c/4) May in the Botanic Gardens. On each of these nests the ♂ was sitting, and as, when flushed, it did not immediately disappear into a nearby thicket it was closely observed and it could be clearly seen to have a relatively large bill. Each nest was a large, rather untidy globe of dead leaves and dry grass, lined with fine dry *Panicum* grass, and with side entrance, and not unlike the larger and untidier nest of the Grey-headed Negro Finch, *Nigrita canicapilla schistacea* Sharpe. The c/4 was about eight feet above the ground on the rib of a *Raphia* palm in the patch of relic forest and the c/5 some seven feet above ground level on top of an intensely prickly cactus in a stony, succulent garden, aloes, etc., at the foot of a lofty forest giant, with open lawns around it. The cactus site, which was only accessible, with difficulty, by standing on a box or step-ladder, was still in use when I finally left Entebbe in September 1950 and was then several feet higher: the *Raphia* palm site was used for a couple more years and then abandoned. It was probably subject to too much disturbance. I was absent from Uganda during the first half of 1947, but on 10th March 1948 I collected c/4 (incubated several days) from the 'cactus' nest, which was then ten feet above ground level: the nest was

a bulky, globular affair of dry leaves, dry grass, etc., lined with fine dry *Panicum*, dry fern, etc., with side entrance: the brooding ♀ was put off the nest and twice was viewed at very close quarters. On 30th March, the same year, the ♂ was twice flushed from the nest when the cactus stem was tapped and he was presumed to be incubating. Subsequently the nest was left undisturbed except an occasional tap to ascertain whether a bird was sitting—precise details were not kept.

On 30th March 1948 an inaccessible nest at least 12 feet high in a tree-fern, *Cyathea dregei* was found in the relic forest patch, the ♂ was sitting and was put off twice: he was again flushed the next day. There were several tree-ferns, some up to 15 feet high, in this patch which were the resort of breeding *Pirenestes* during the next two years.

On 8th September 1948, c/4 (incubated a few days) was found ten feet above the ground in the centre of a leaf-tuft of a screw-pine (*Pandanus*) growing on an open, lawn-like slope; the ♂ was incubating. The bulky, globular nest measured approximately overall 12 x 10 x 9 inches; it had a foundation of dead leaves, bark strips and broad dead grass blades, and was mainly constructed of long, dry creepers, grass stems, dry ferns, dead leaves, etc., lined with bast, dry bamboo leaf and bark strips, and fluffy green flowering *Panicum* heads. This nesting site which must have been used before was soon abandoned, as it was probably too accessible and prone to disturbance. On 12th September the same year a ♀ was sitting in a nest at the top of a slender bare-stemmed *Dracaena*, *Dracaena fragrans*, with tufted top, fully 20 feet above the ground, growing in an old Para rubber plantation. Without causing undue disturbance it was possible to confirm that a bird was sitting, more usually the ♂, up to 20th September. Owing to frequent absences from Entebbe, on tour, it was not possible to make a more thorough investigation of the breeding habits of the local *Pirenestes*, though admittedly many opportunities were missed. It was particularly noticeable that when *Pirenestes* took refuge in—for it—the abnormally open conditions of the Botanic Gardens it selected preferably for its nest sites such as Raphia-leaf rib, *Dracaena* and tree-fern which would also occur in its natural habitat, as well as in a diabolically protected cactus (perhaps reminiscent of a prickly-stemmed tree-fern) inaccessible to any predator and in a screw-pine (not unlike a small *Dracaena*) which soon proved to be unsuitable. In the habitat of this species of *Pirenestes*, large arboreal ornithophagous snakes are common and this bird evidently selects sites which afford the maximum protection from such predators. I was never able to hear any song, but I once saw a nesting pair of *Pirenestes*, together with a number of small birds of several species, noisily mobbing a large (fully six feet) Eastern Jameson's Mamba, *Dendroaspis jamesoni kaimosae* in the Botanic Gardens forest patch; they were uttering an agitated, high-pitched, incessant 'tzeec tzeec tzeec'.

Seth-Smith (4: p. 1489) in April, at Mpumu in Kyagwe, found a nest with three eggs which were white, rather rounded, but not glossy—one egg measures 18 x 14 mm. The ♂ was incubating and was collected: it is the only Uganda example of *Pirenestes ostrinus* in the British Museum (Natural History) collection. The large, untidy-looking nest of coarse grass woven together with the loose ends sticking out and lined with finer grass, was placed on a bare branch overhanging a road and difficult to reach.



According to Bannerman (4: p. 285) Bates found a nest of *ostrinus* in South Cameroon "a large globular mass of dry broad strips of leaves of the Calamus palm, laid or woven together loosely, with an opening at one side and lined with a few fine grass-tops". The three eggs, white without gloss, measured 20 x 14, 19.5 x 14 and 19 x 14 mm. There are two breeding seasons, which coincide with the two rainy seasons, at Entebbe and in the lake-shore region—during the three months March to May and in September–October. When eggs were taken, a repeat clutch was laid soon after; but I had no evidence to suggest that the same pair nested in both breeding seasons in one year. The 'cactus' site was used regularly over a period of five years and mostly the same nest—repaired as necessary—was used, but there was little room for other nests. The same palm rib was resorted to for three years, but a new nest at a different spot on the rib was built on each occasion and also for a repeat clutch. During four years new nests were occupied in one or other of the group of tree-ferns. For two breeding seasons (in September) the same nest at the top of the lofty 20 feet *Dracaena* was occupied. I collected three sets, each of four eggs, and measured c/5 taken by some schoolboys. These 17 eggs are white and smooth, but not glossy; their measurements average 17.8 x 13.6 mm., and the variation is 16.6–18.4 x 12.7–14.3 mm.

There were at least four breeding pairs of *Pirenestes* in the Botanic Gardens, two during the long rains (March to May) and two in the short rains (September–October).

Nests I examined which had been recently occupied or which were old, were always clean and showed no signs of fouling. I never saw these Seed-crackers feeding and I have no idea on what they fed.

Jackson first knew the Botanic Gardens when there was dense cover along the foreshore and a preponderance of primeval forest and if it was then a haunt of *Pirenestes*—as it might well have been—he certainly never saw it. At the same time that *Pirenestes* appeared, there was also a considerable influx of the handsome little Black-and-White Mannikin, *Lonchura poensis poensis* (Fraser)—evidently seeking a new home—which, too, was unknown to Jackson. It quickly established itself in its new habitat in the Gardens, where it had not previously been observed, and became a common breeding species. It must be mentioned that over a period of some twenty-five years large areas of forest had been steadily and progressively cleared to the north of the Botanic Gardens and it is probable that both *Pirenestes* and *Lonchura* from farther afield had for a while taken refuge in the forest patch which the road making operations eventually destroyed.

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